

## ArevaEPRDCPEm Resource

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**From:** McLellan, Judith  
**Sent:** Friday, September 07, 2012 2:58 PM  
**To:** ArevaEPRDCPEm Resource  
**Subject:** FW: Response to U.S. EPR Design Certification Application RAI No. 315, FSAR Ch. 16 OPEN ITEM, Supplement 3  
**Attachments:** Batch 315 Supplement 3 Response US EPR DC.pdf

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**From:** BRYAN Martin (EXTERNAL AREVA) [mailto:Martin.Bryan.ext@areva.com]  
**Sent:** Tuesday, October 12, 2010 4:59 PM  
**To:** Tesfaye, Getachew  
**Cc:** DELANO Karen (AREVA); ROMINE Judy (AREVA); BENNETT Kathy (AREVA); RYAN Tom (AREVA); LENTZ Tony (EXTERNAL AREVA)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 315, FSAR Ch. 16 OPEN ITEM, Supplement 3

Getachew,

AREVA NP Inc. provided responses to the four questions of RAI No. 315 on April 5, 2010. Supplement 1 and Supplement 2 responses to RAI No. 315 were sent on May 20, 2010 and August 27, 2010, respectively, to provide a revised schedule.

The attached file, "RAI 315 Supplement 3 US EPR DC.pdf," provides a partial response.

The following table indicates the respective pages in the response document, "RAI 315 Supplement 3 US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 315 — 16-321	2	3

The schedule for a technically correct and complete response to the remaining three questions remains unchanged and will be provided on October 21, 2010.

Sincerely,

Martin (Marty) C. Bryan  
U.S. EPR Design Certification Licensing Manager  
AREVA NP Inc.  
Tel: (434) 832-3016  
702 561-3528 cell  
[Martin.Bryan.ext@areva.com](mailto:Martin.Bryan.ext@areva.com)

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**From:** BRYAN Martin (External RS/NB)  
**Sent:** Friday, August 27, 2010 12:01 PM  
**To:** 'Tesfaye, Getachew'  
**Cc:** DELANO Karen (RS/NB); ROMINE Judy (RS/NB); BENNETT Kathy (RS/NB); RYAN Tom (RS/NB)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 315, FSAR Ch. 16 OPEN ITEM, Supplement 2

Getachew,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the 4 questions in RAI No. 315 on April 5, 2010. AREVA provided an updated schedule for the remaining 4 responses on May 20, 2010 to allow for additional interaction with the NRC.

A revised schedule is provided below to allow additional time to address comments and have additional interaction with the staff on the four remaining questions.

A complete answer is not provided for the remaining 4 questions. The schedule for a technically correct and complete response to these questions is changed and is provided below.

<b>Question #</b>	<b>Response Date</b>
RAI 315 — 16-318	October 21, 2010
RAI 315 — 16-319	October 21, 2010
RAI 315 — 16-320	October 21, 2010
RAI 315 — 16-321	October 21, 2010

Sincerely,

Martin (Marty) C. Bryan  
U.S. EPR Design Certification Licensing Manager  
AREVA NP Inc.  
Tel: (434) 832-3016  
702 561-3528 cell  
[Martin.Bryan.ext@areva.com](mailto:Martin.Bryan.ext@areva.com)

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**From:** BRYAN Martin (EXT)  
**Sent:** Thursday, May 20, 2010 12:18 PM  
**To:** 'Tefaye, Getachew'  
**Cc:** DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); RYAN Tom (AREVA NP INC)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 315, FSAR Ch. 16 OPEN ITEM, Supplement 1

Getachew,

AREVA NP Inc. provided a schedule for technically correct and complete responses to the 4 questions in RAI No. 315 on April 5, 2010. As agreed with the NRC, additional time is needed for the NRC to review and discuss the draft responses to these questions with AREVA.

The schedule for technically correct and complete responses to these questions has been revised as provided below.

<b>Question #</b>	<b>Response Date</b>
RAI 315 — 16-318	August 31, 2010
RAI 315 — 16-319	August 31, 2010
RAI 315 — 16-320	August 31, 2010
RAI 315 — 16-321	August 31, 2010

Sincerely,

Martin (Marty) C. Bryan  
U.S. EPR Design Certification Licensing Manager  
AREVA NP Inc.

Tel: (434) 832-3016  
702 561-3528 cell  
[Martin.Bryan.ext@areva.com](mailto:Martin.Bryan.ext@areva.com)

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**From:** BRYAN Martin (EXT)  
**Sent:** Monday, April 05, 2010 5:01 PM  
**To:** 'Tesfaye, Getachew'  
**Cc:** DELANO Karen V (AREVA NP INC); ROMINE Judy (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); PANNELL George L (AREVA NP INC); LENTZ Tony F (EXT)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 315 (3878), FSARCh. 16 OPEN ITEM

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 315 Response US EPR DC.pdf" provides a schedule since a technically correct and complete response to the 4 questions is not provided.

The following table indicates the respective pages in the response document, "RAI 315 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 315 — 16-318	2	2
RAI 315 — 16-319	3	3
RAI 315 — 16-320	4	4
RAI 315 — 16-321	5	5

A complete answer is not provided for the 4 questions. The schedule for a technically correct and complete response to these questions is provided below.

Question #	Response Date
RAI 315 — 16-318	May 20, 2010
RAI 315 — 16-319	May 20, 2010
RAI 315 — 16-320	May 20, 2010
RAI 315 — 16-321	May 20, 2010

Sincerely,  
Martin (Marty) C. Bryan  
Licensing Advisory Engineer  
AREVA NP Inc.  
Tel: (434) 832-3016  
[Martin.Bryan@areva.com](mailto:Martin.Bryan@areva.com)

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**From:** Tesfaye, Getachew [<mailto:Getachew.Tesfaye@nrc.gov>]  
**Sent:** Wednesday, November 18, 2009 6:59 PM  
**To:** ZZ-DL-A-USEPR-DL  
**Cc:** Le, Hien; DeMarshall, Joseph; Kowal, Mark; Hearn, Peter; Colaccino, Joseph; ArevaEPRDCPEm Resource  
**Subject:** U.S. EPR Design Certification Application RAI No. 315 (3878), FSARCh. 16 OPEN ITEM

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on October 21, 2009, and discussed with your staff on November 18, 2009. No changes were made to the draft RAI questions as a result of that discussion. The question in this RAI is an OPEN ITEM in the safety

evaluation report for Chapter 16 for Phases 2 and 3 reviews. As such, the schedule we have established for your application assumes technically correct and complete responses prior to the start of Phase 4 review. For any RAI that cannot be answered prior to the start of Phase 4 review, it is expected that a date for receipt of this information will be provided so that the staff can assess how this information will impact the published schedule.

Thanks,

Thanks,  
Getachew Tesfaye  
Sr. Project Manager  
NRO/DNRL/NARP  
(301) 415-3361

**Hearing Identifier:** AREVA\_EPR\_DC\_RAIs  
**Email Number:** 4035

**Mail Envelope Properties** (A41C2340DAB39B44AD0B9623285CB3337FA7572E40)

**Subject:** FW: Response to U.S. EPR Design Certification Application RAI No. 315, FSAR  
Ch. 16 OPEN ITEM, Supplement 3  
**Sent Date:** 9/7/2012 2:57:54 PM  
**Received Date:** 9/7/2012 2:57:55 PM  
**From:** McLellan, Judith

**Created By:** Judith.McLellan@nrc.gov

**Recipients:**  
"ArevaEPRDCPEm Resource" <ArevaEPRDCPEm.Resource@nrc.gov>  
Tracking Status: None

**Post Office:** HQCLSTR02.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	6720	9/7/2012 2:57:55 PM
Batch 315 Supplement 3 Response US EPR DC.pdf		72026

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

**Response to**

**Request for Additional Information No. 315 (3878), Revision 0, Supplement 3**

**11/18/2009**

**U. S. EPR Standard Design Certification**

**AREVA NP Inc.**

**Docket No. 52-020**

**SRP Section: 16 - Technical Specifications**

**Application Section: TS 3.3**

**QUESTIONS for Technical Specification Branch (CTSB)**

**Question 16-321:****OPEN ITEM****Follow-up to RAI 110, Question 16-222.**

In RAI-SRP16-CTSB-110/222, the staff requested an explanation regarding the Bases statement on page B 3.3.1-9 of Rev. 0, which reads "The implementation of manual system level actuation of ESF functions and the priority between the automatic functions of the PS and the manual system level initiation is determined on a case-by-case basis." The response states that because the possibility exists for contradictory protective orders (one automatic, one manual) to be given to a function simultaneously, priority must be established between the two functions. Although the response discusses compliance with requirements for manual initiation identified in IEEE std 603-1998, it does not adequately address the staff's question regarding the operator's ability to effectively implement manual protective actions in all cases. The applicant has deleted the statement on the basis that it is not necessary to the Technical Specification Bases discussion and could be confusing. This issue is identified as an open item in the SER w/OI for Chapter 16 of the EPR FSAR.

**Response to Question 16-321:**

The U.S. EPR Instrumentation and Control (I&C) architecture implements several interrelated design principles such as defense-in-depth, diversity, redundancy, independence and priority to optimize plant safety. These principles are applied so that the impact of failures is minimized and the required safety functions are executed when required.

As discussed in U.S. EPR FSAR Tier 2 Section 7.1.1.6.5, "Priority," the U.S. EPR I&C design allows for multiple I&C systems to send requests to a given actuator. To make certain that each individual actuator executes the proper action for the given plant condition, priority management rules are provided. The four primary functional categories provide the basis for priority management of the U.S. EPR I&C architecture. The order of priority for automatic functions is listed from highest to lowest:

- Safety-related I&C functions (safety-related)
  - Actuation functions
  - Control functions
- Risk reduction I&C functions (non-safety-related)
- Limitation I&C functions (non-safety-related)
- Operational I&C functions (non-safety-related)
  - Equipment protection functions
  - Automatic control
  - Manual control

The Priority and Actuator Control System manages priority for safety-related components. For non-safety-related components, priority is managed in the application software of the Level 1 I&C systems.

The I&C systems design is integrated with the human factors engineering (HFE) principles addressed in U.S. EPR FSAR Tier 2 Chapter 18, "Human Factors Engineering," for improved human reliability and overall plant safety.

The relative priority between manual and automatic functions is not addressed by or in the requirements, guidance, or content of 10 CFR 50.36, "Technical Specifications," Standard Review Plan Chapter 16, "Technical Specifications," the NRC Policy Statement on Technical Specification Improvements for Nuclear Power Plants, or the NRC's Standard Technical Specifications. Therefore, AREVA believes that this I&C design issue is already addressed as part of the review of U.S. EPR FSAR Tier 2 Chapter 7, "Instrumentation and Controls."

**FSAR Impact:**

The U.S. EPR FSAR will not be changed as a result of this question.